

**IN THE CLAIMS**

Please cancel Claims 1 through 38, 50, and 51.

Please amend the claims as indicated in Appendix A as attached hereto. A clean version of the claims follow:

A1  
39. (Amended) A cell that produces a glycoconjugate of interest in the absence of an exogenously supplied nucleotide triphosphate, the cell comprising heterologous genes encoding one or more sugar-nucleotide regenerating enzyme and one or more glycosyltransferase.

A2  
49. (Amended) A method of producing a glycoconjugate of interest in the absence of an exogenously supplied nucleotide triphosphate, comprising the step of contacting a cell comprising heterologous genes encoding:

- (i). one or more encoding sugar-nucleotide regenerating enzymes selected from the group consisting of GalK, GalT, GalU, PykF, Ndk, PpK, AcK, PoxB, Ppa, PgM, NagE, Agm1, glmU, a GalNAc kinase, a pyrophosphorylase, Ugd, NanA, Cmk, NeuA, Alg2, Alg1, SusA, ManB, ManC, a phosphomannomutase, GalE, GMP, GMD, and GFS; and

- (ii). one or more glycosyltransferase,

with a bioenergetic.

Please add the following new claims:

52. (New) The cell of claim 39, wherein the one or more sugar-nucleotide regenerating enzyme is selected from the group consisting of GalK, GalT, GalU, PykF, Ndk, Ppk, Ack, PoxB, Ppa, PgM, NagE, Agm1, glmU, a GalNAc kinase, a pyrophosphorylase, Ugd, NanA, Cmk, NeuA, Alg2, Alg1, SusA, ManB, ManC, a phosphomannomutase, GalE, GMP, GMD, and GFS.

53. (New) The cell of claim 39 comprising genes encoding GalK, GalT, and GalU.

54. (New) The cell of claim 53 comprising a gene encoding Ndk.

55. (New) The cell of claim 53 comprising a gene encoding Ppk.

56. (New) The cell of claim 53 comprising a gene encoding PykF.

57. (New) The cell of claim 53 comprising genes encoding PoxB, Ndk, and Ppa.

58. (New) The cell of claim 39 comprising a gene encoding SusA.

59. (New) The cell of claim 58 further comprising a gene encoding GalE.

60. (New) The cell of claim 58 further comprising a gene encoding GluT.

61. (New) The cell of claim 58 further comprising genes encoding Ugd and UGT2B7.

70. (New) The cell of claim 62, wherein the fucosyltransferase is selected from the group consisting of  $\alpha$ 1,3-FucT,  $\alpha$ 1,2-FucT, and  $\alpha$ 1,3/4-FucT.

71. (New) A method of producing a glycoconjugate of interest in the absence of an exogenously supplied nucleotide triphosphate, the method comprising:

contacting a cell comprising heterologous genes encoding susA, galE, and a glycosyltransferase with a bioenergetic.

72. (New) The method according to claim 71, wherein the bioenergetic comprises fructose generated within the cell by susA acting on sucrose.

73. (New) The method according to claim 72 further comprising supplying the sucrose to the cell.

74. (New) The method according to claim 71, wherein the glycosyltransferase is a galactosyltransferase.

75. (New) The method according to claim 74, wherein the galactosyltransferase is  $\alpha$ 1,3GalT.

76. (New) The method according to claim 71, wherein the glycosyltransferase is LgtC.

62. (New) The cell of claim 39, wherein the one or more glycosyltransferase(s) is selected from the group consisting of a galactosyltransferase, a glucosyltransferase, a N-acetylglucosaminyl transferase, an N-acetylgalactosaminyl transferase, a glucuronyltransferase, a sialyltransferase, a mannosyltransferase, and a fucosyltransferase.

63. (New) The cell of claim 62 wherein the galactosyltransferase is selected from the group consisting of LgtB and LgtC.

64. (New) The cell of claim 62, wherein the glucosyltransferase is selected from the group consisting of LgtF, Alg5, and DUGT.

65. (New) The cell of claim 62, wherein the N-acetylglucosaminyl transferase is LgtA.

66. (New) The cell of claim 62, wherein the N-acetylgalactosaminyl transferase is UDP-GalNAc:2'-fucosylgalactoside- $\alpha$ -3-N-acetylgalactosaminyl transferase.

67. (New) The cell of claim 62, wherein the glucuronyltransferase is UGT2B7.

68. (New) The cell of claim 62, wherein the sialyltransferase is SiaT 0160.

69. (New) The cell of claim 62, wherein the mannosyltransferase is selected from the group consisting of Alg1 and Alg2.